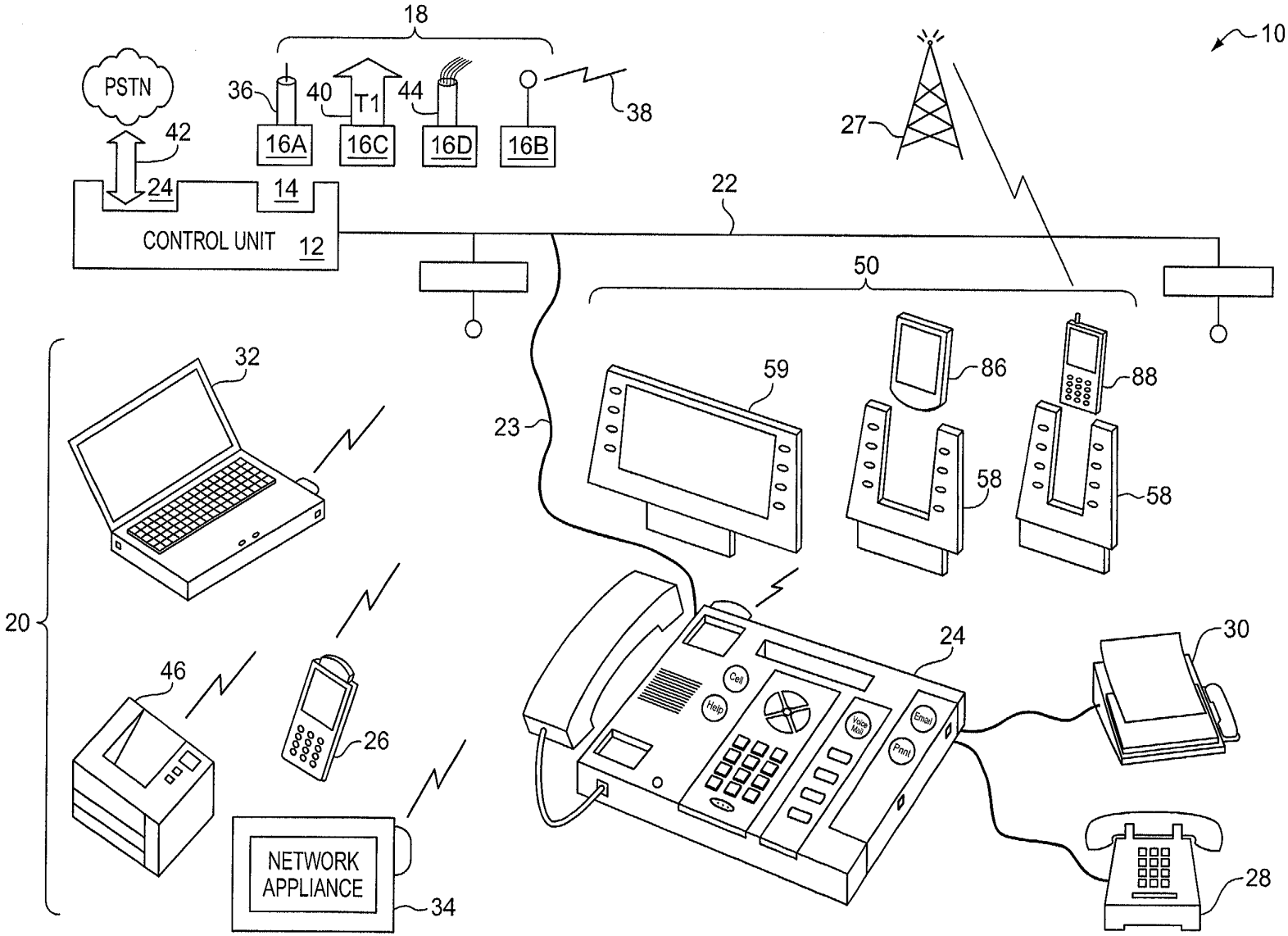

18
10
PSTN
42
36
40
T1
44
38
16A
16C
16D
16B
27
24
14
22
CONTROL UNIT 12
50
32
59
86
88
23
58
58
20
24
30
46
26
Cell
Help
Voice Mail
Email
Print
NETWORK APPLIANCE
34
28

FIG. 1

TOSTAT E904200T

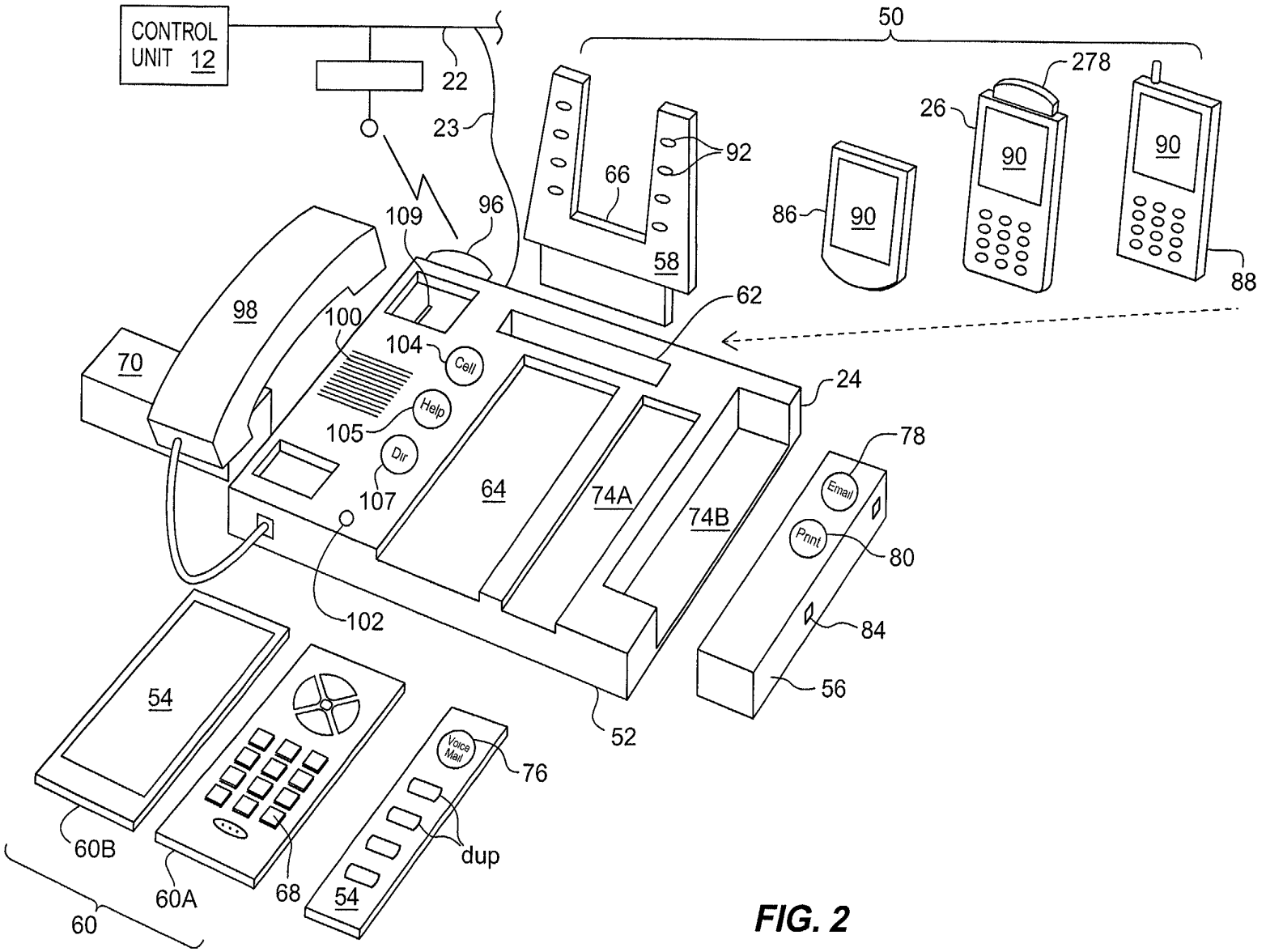


FIG. 2

Docket: 5904-2007

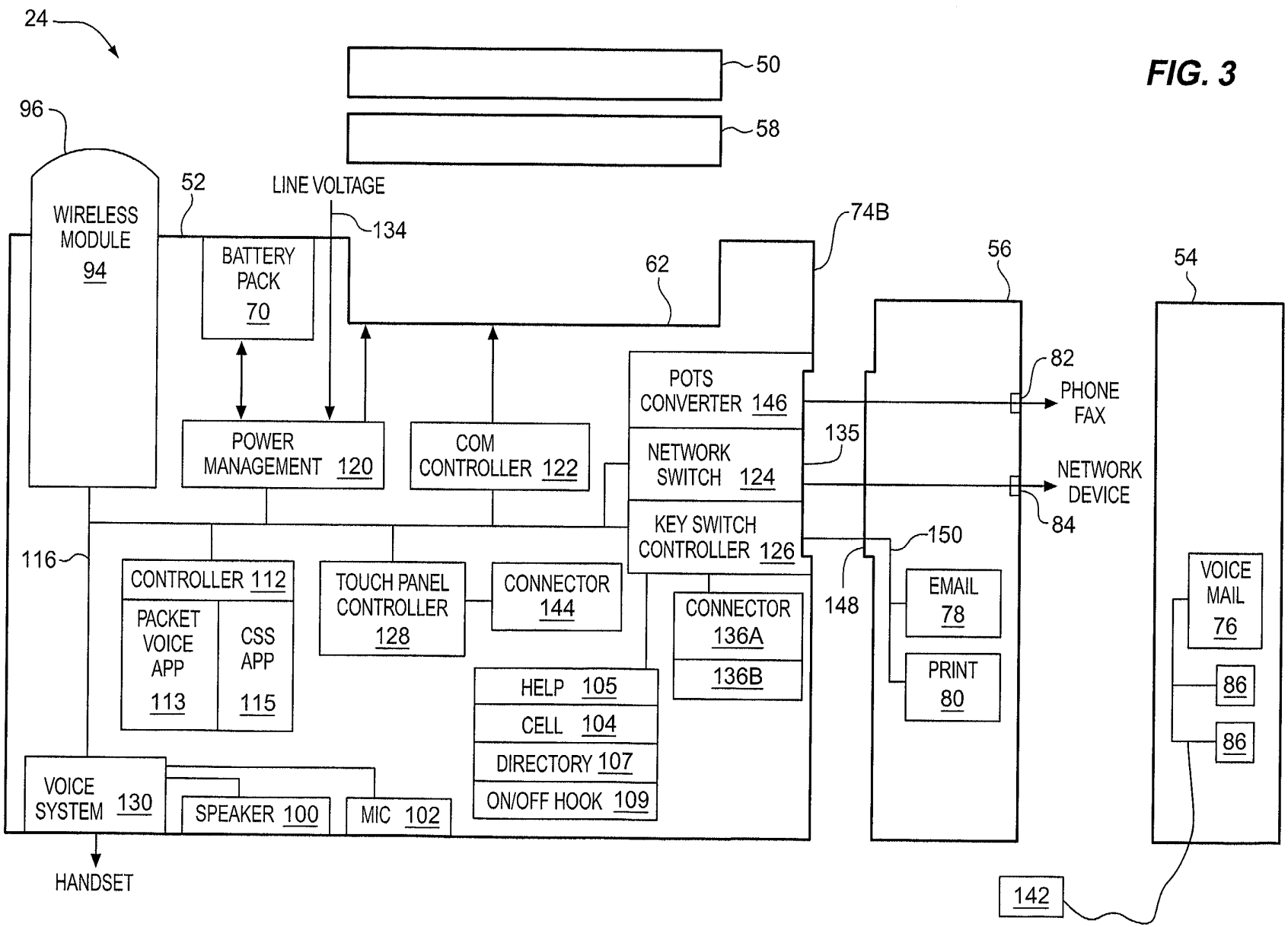
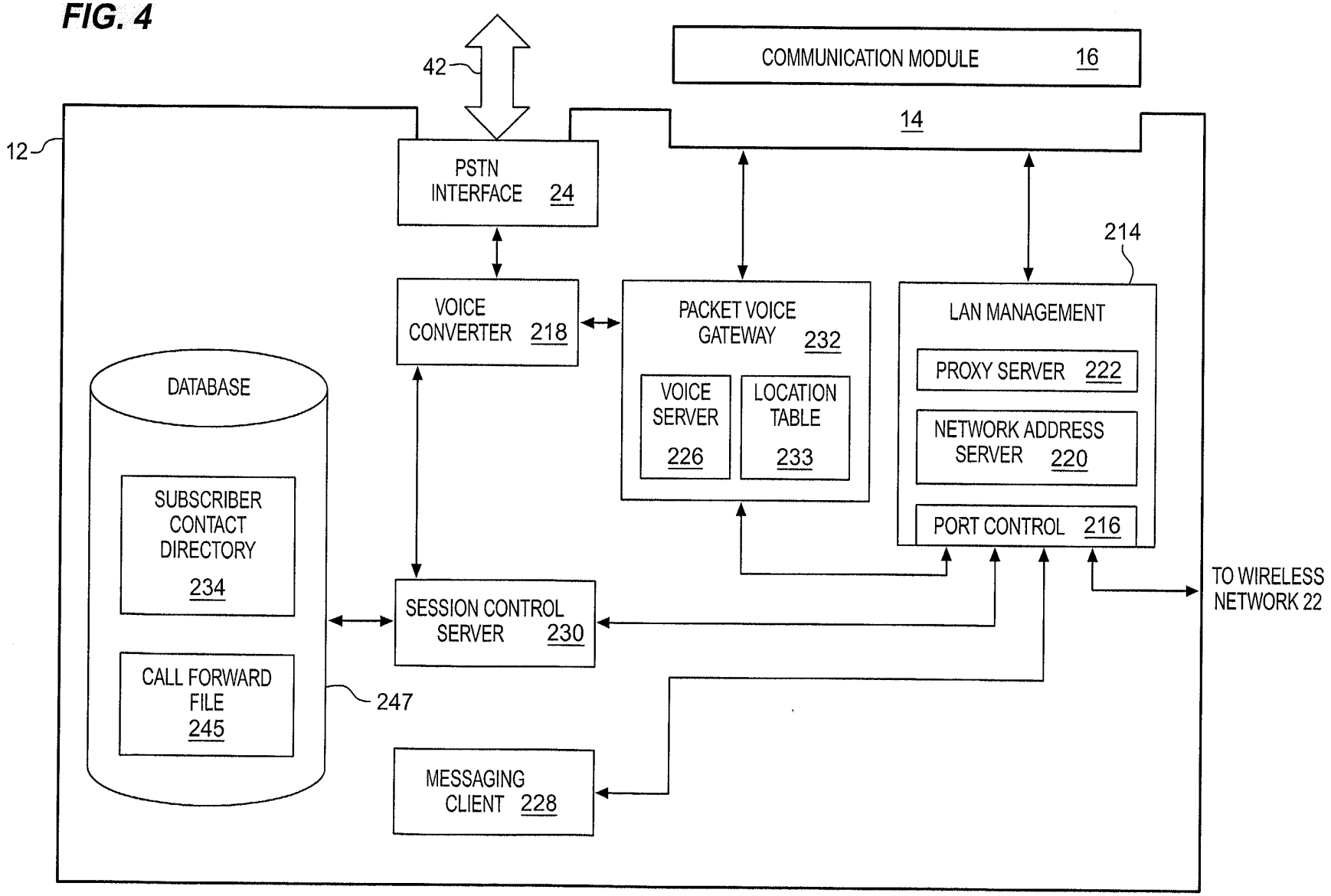


FIG. 3

TOSTAT E30K3001

FIG. 4



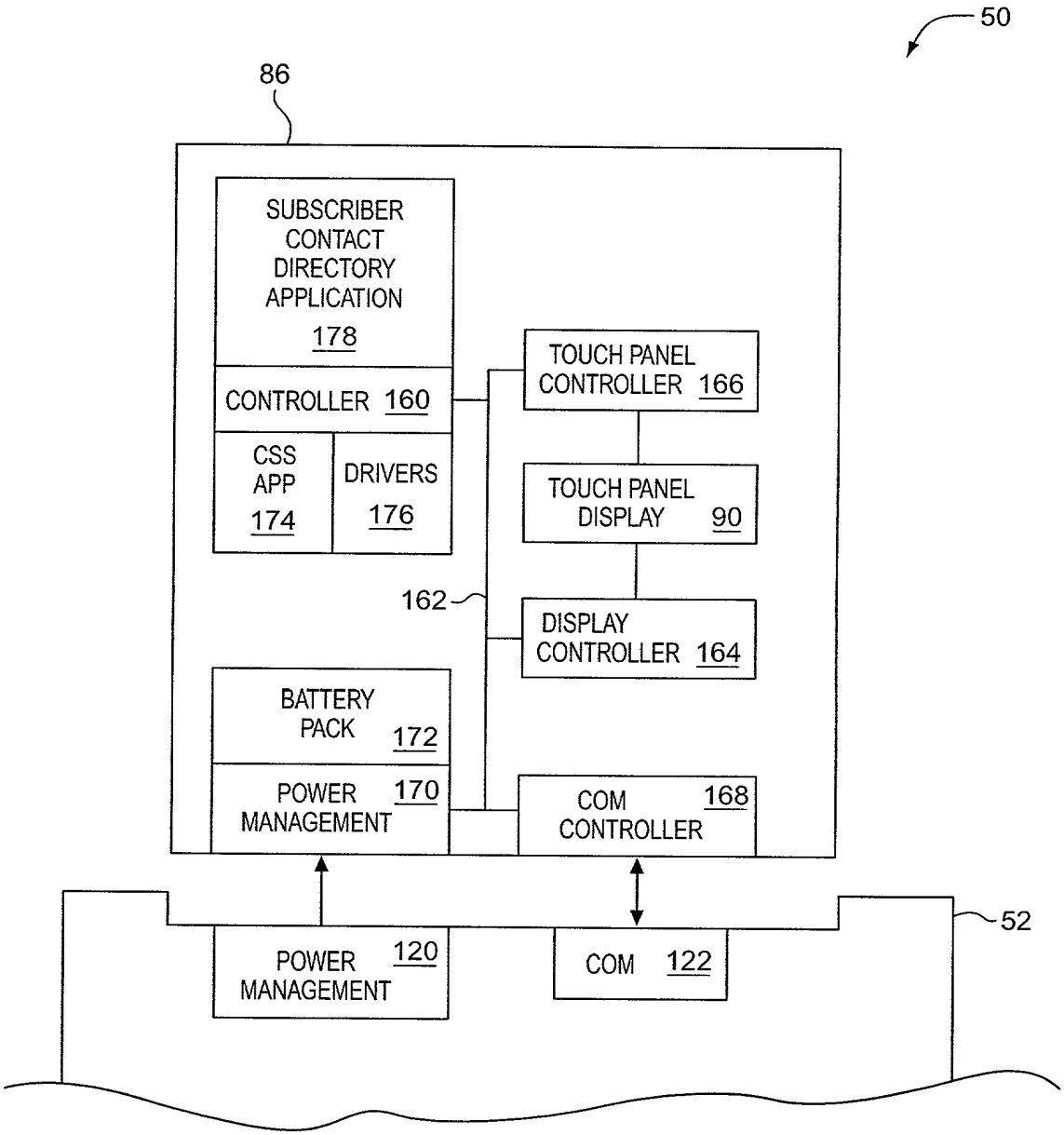

50
86
SUBSCRIBER CONTACT DIRECTORY APPLICATION 178
CONTROLLER 160
CSS APP 174
DRIVERS 176
TOUCH PANEL CONTROLLER 166
TOUCH PANEL DISPLAY 90
162
DISPLAY CONTROLLER 164
BATTERY PACK 172
POWER MANAGEMENT 170
COM CONTROLLER 168
52
POWER MANAGEMENT 120
COM 122

FIG. 5

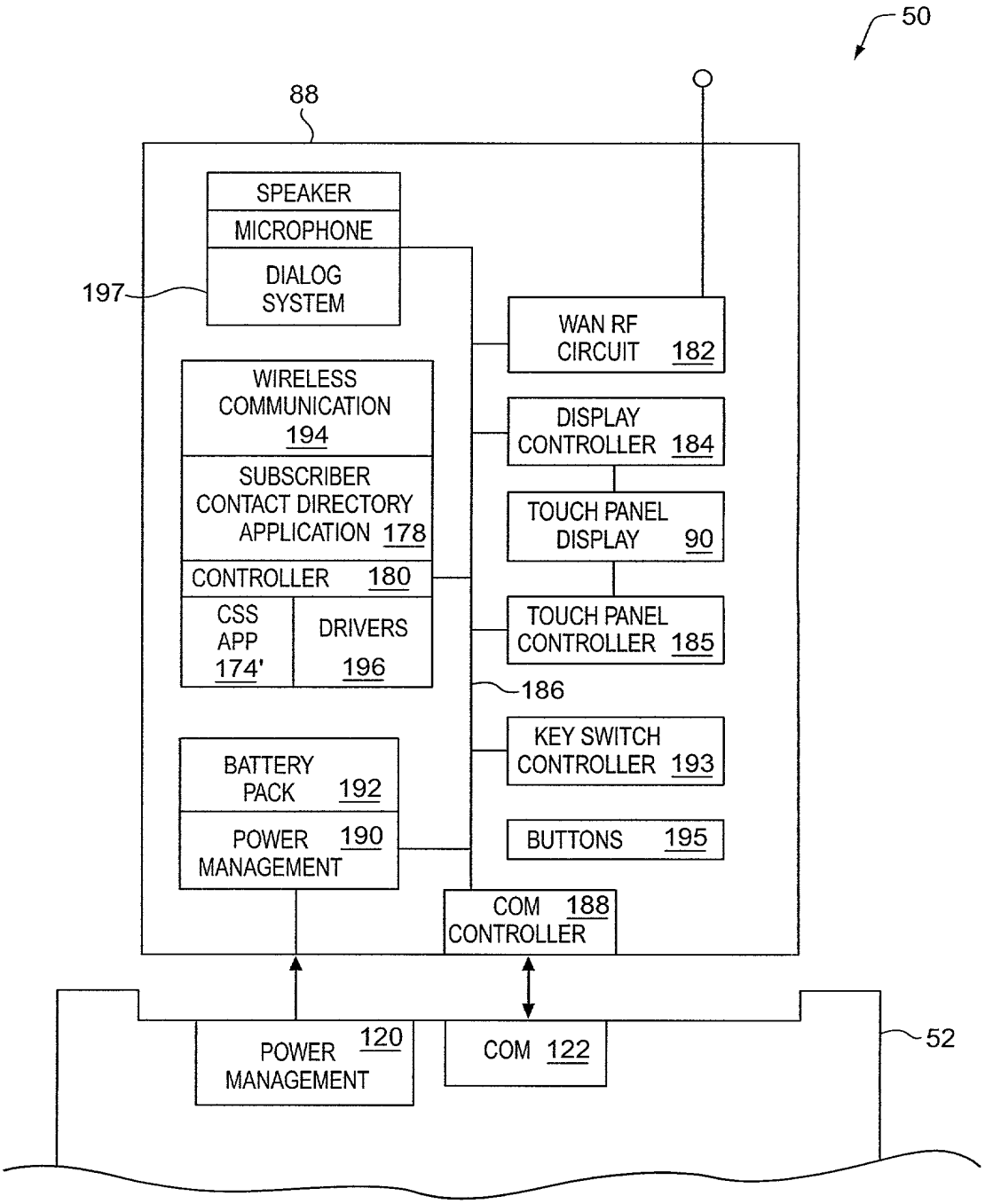

50
88
SPEAKER
MICROPHONE
DIALOG SYSTEM
197
WAN RF CIRCUIT 182
WIRELESS COMMUNICATION 194
DISPLAY CONTROLLER 184
SUBSCRIBER CONTACT DIRECTORY APPLICATION 178
TOUCH PANEL DISPLAY 90
CONTROLLER 180
CSS APP 174'
DRIVERS 196
TOUCH PANEL CONTROLLER 185
186
KEY SWITCH CONTROLLER 193
BATTERY PACK 192
POWER MANAGEMENT 190
BUTTONS 195
COM CONTROLLER 188
POWER MANAGEMENT 120
COM 122
52

FIG. 6

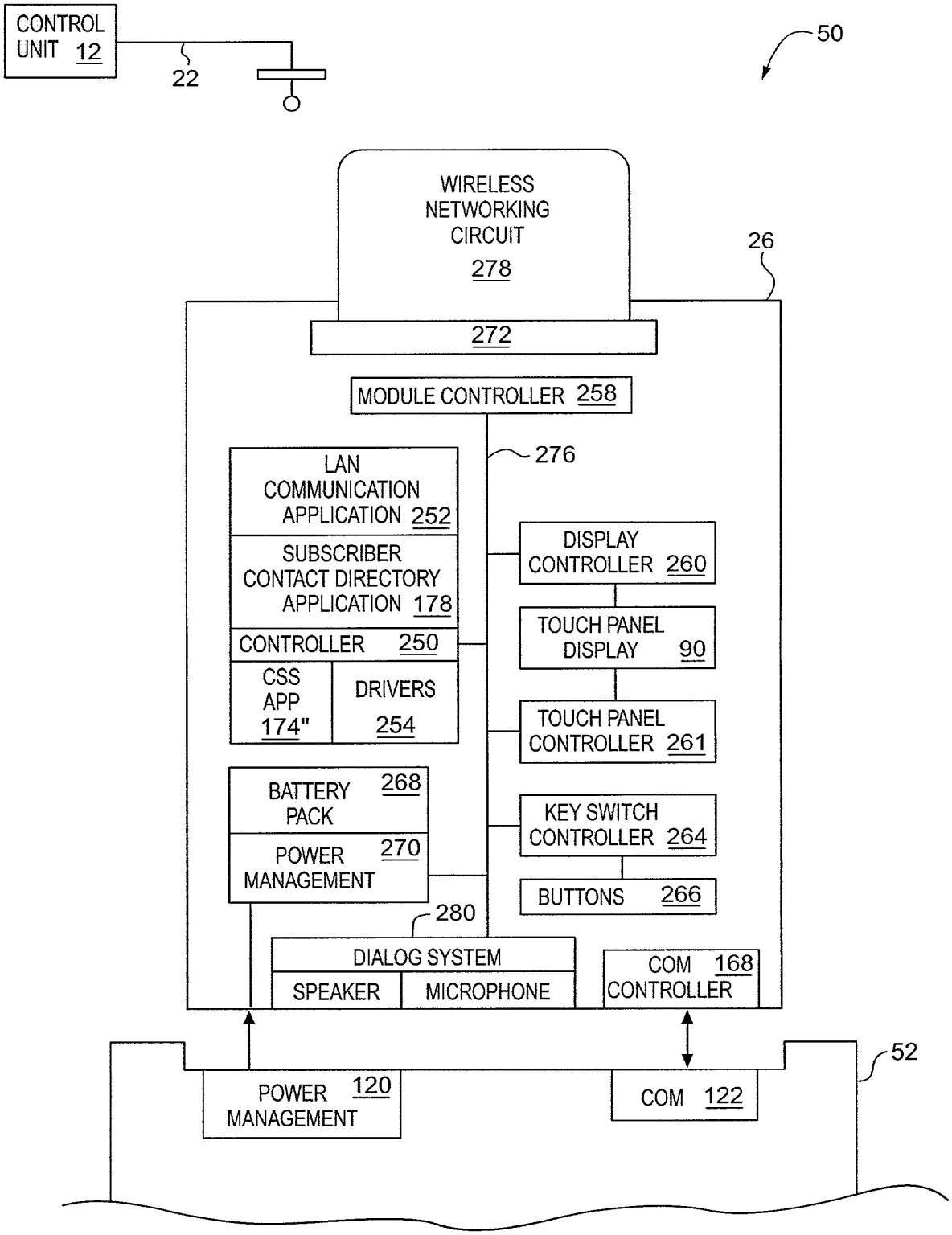

CONTROL UNIT 12
22
50
WIRELESS NETWORKING CIRCUIT 278
26
272
MODULE CONTROLLER 258
276
LAN COMMUNICATION APPLICATION 252
SUBSCRIBER CONTACT DIRECTORY APPLICATION 178
CONTROLLER 250
CSS APP 174"
DRIVERS 254
DISPLAY CONTROLLER 260
TOUCH PANEL DISPLAY 90
TOUCH PANEL CONTROLLER 261
BATTERY PACK 268
POWER MANAGEMENT 270
KEY SWITCH CONTROLLER 264
BUTTONS 266
280
DIALOG SYSTEM
SPEAKER
MICROPHONE
COM 168 CONTROLLER
52
POWER MANAGEMENT 120
COM 122

FIG. 7

300

START UP STATE - WAITING FOR EVENTS	
EVENTS	STEPS
OPEN SESSION REQUEST ON PREDETERMINED PORT	• ESTABLISH NEW LOCAL COMMUNICATION DEVICE STATE MACHINE • ESTABLISH SESSION • SEND LOGON CONTROL SCRIPTS • GET CSS INTERFACE CONFIGURATION • PROVIDE MAIN MENU DISPLAY CONTENT • PROVIDE MAIN MENU LAYOUT CONTROL • GO TO MAIN MENU STATE

FIG. 8A

304

MAIN MENU STATE - WAITING FOR EVENTS	
EVENTS	STEPS
302 MENU SELECTION	• GO TO SELECTED STATE
308 INITIALIZE WAN SUBSCRIBER DEVICE	• SEND ID EXTRACTION CONTROL SCRIPTS • GET SUBSCRIBER DEVICE ID • UPDATE NETWORK LOCATION TABLE • SYNCHRONIZE SUBSCRIBER CONTACT DIRECTORY • PROVIDE INITIAL DISPLAY CONTENT (MAIN MENU) • PROVIDE DISPLAY LAYOUT CONTROL • ESTABLISH SESSION WITH WAN CONTROLLER • PROVIDE CALL FORWARD SIGNALS TO WAN CONTROLLER • GO TO SUBSCRIBER DEVICE MAIN MENU STATE
310 HELP REQUEST	• SET UP AUDIO SESSION CHANNEL • TO AUDIO HELP CSS • GO TO AUDIO HELP STATE

FIG. 8B

316

SUBSCRIBER DEVICE MAIN MENU STATE - WAITING FOR EVENTS	
EVENTS	STEPS
312 MENU SELECTION	• GO TO SELECTED STATE
320 HELP REQUEST	• PROVIDE HELP MENU DISPLAY CONTENT • PROVIDE HELP MENU DISPLAY LAYOUT CONTROL • GO TO GRAPHIC HELP STATE
322 MESSAGE REQUEST	• GET MESSAGES FROM REMOTE SYSTEM • SORT MESSAGES BY TYPE • PROVIDE MESSAGE LIST CONTENT • PROVIDE MESSAGE LIST LAYOUT CONTROL • GO TO MESSAGE LIST STATE
324 AUDIO MESSAGE REQUEST	
314 DIRECTORY REQUEST	• PROVIDE DIRECTORY CONTENT AND LAYOUT CONTROL • TRANSITION TO SUBSCRIBER DIRECTORY STATE
326 SUBSCRIBER DEVICE REMOVE	• ESTABLISH SESSION WITH WAN CONTROLLER • PROVIDE TERMINATE CALL FORWARD SIGNAL TO WAN CONTROLLER • GO TO MAIN MENU STATE

FIG. 8C

328

MESSAGE LIST STATE - WAITING FOR EVENTS	
EVENTS	STEPS
334 AUDIO MESSAGE SELECT	• SEND AUDIO FILE TO CSS • PROVIDE PROCESSING SCRIPT TO OUTPUT FILE • GO TO AUDIO SESSION STATE
336 MESSAGE SELECT	• PROVIDE MESSAGE DISPLAY CONTENT • PROVIDE MESSAGE DISPLAY LAYOUT CONTROL • GO TO MESSAGE DISPLAY STATE
338 MESSAGE PRINT	• FORMAT MESSAGE CONTENT FOR PRINTER • SEND MESSAGE FILE TO PRINTER • GO TO MESSAGE LIST STATE
340 HELP REQUEST	• PROVIDE HELP MENU DISPLAY CONTENT AND DISPLAY LAYOUT CONTROL • GO TO GRAPHIC HELP STATE
342 SUBSCRIBER DEVICE REMOVE	• ESTABLISH SESSION WITH WAN CONTROLLER • PROVIDE TERMINATE CALL FORWARD SIGNAL TO WAN CONTROLLER • GO TO MAIN MENU STATE

FIG. 8D

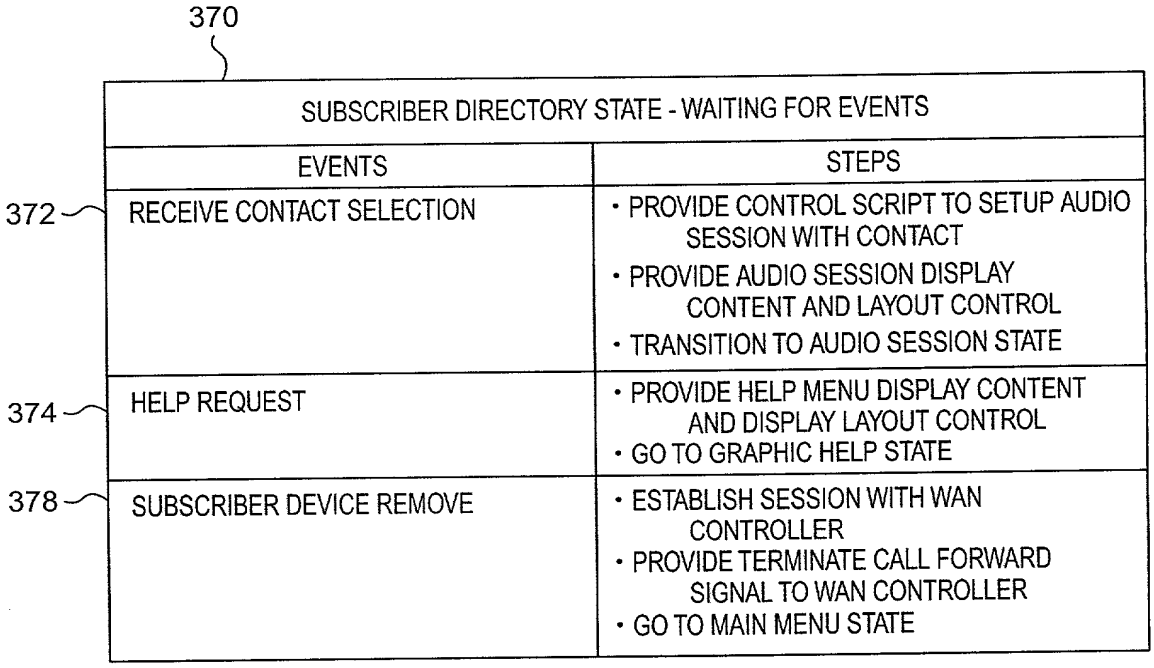

370
SUBSCRIBER DIRECTORY STATE - WAITING FOR EVENTS
EVENTS
STEPS
372
RECEIVE CONTACT SELECTION
• PROVIDE CONTROL SCRIPT TO SETUP AUDIO SESSION WITH CONTACT
• PROVIDE AUDIO SESSION DISPLAY CONTENT AND LAYOUT CONTROL
• TRANSITION TO AUDIO SESSION STATE
374
HELP REQUEST
• PROVIDE HELP MENU DISPLAY CONTENT AND DISPLAY LAYOUT CONTROL
• GO TO GRAPHIC HELP STATE
378
SUBSCRIBER DEVICE REMOVE
• ESTABLISH SESSION WITH WAN CONTROLLER
• PROVIDE TERMINATE CALL FORWARD SIGNAL TO WAN CONTROLLER
• GO TO MAIN MENU STATE

FIG. 8E

344

BASE STATE - WAITING FOR EVENTS	
EVENTS	STEPS
354 TOUCH PANEL	• REPORT TOUCH PANEL EVENT TO CONTROLLER • RETURN TO BASE STATE
356 SUBSCRIBER INTERFACE CONTROL BUTTON	• REPORT BUTTON ACTIVATION TO CONTROLLER AND PVA • RETURN TO BASE STATE
358 RECEIVE DISPLAY CONTENT AND LAYOUT CONTROL MESSAGES	• UPDATE DISPLAY • RETURN TO BASE STATE
360 RECEIVE PROCESSING SCRIPT	• PROCESS SCRIPT • RETURN TO BASE STATE
362 WAN TELEPHONE SIGNAL	• GO TO WAN STATE
364 DETECTED SUBSCRIBER DEVICE	• SEND INITIALIZE SUBSCRIBER MESSAGE • RETURN TO BASE STATE
350 RECEIVE MESSAGES FROM CONTROLLER DIRECTED TO SUBSCRIBER DEVICE	• RELAY MESSAGES TO SUBSCRIBER DEVICE
352 RECEIVE MESSAGES FROM SUBSCRIBER DEVICE DIRECTED TO CONTROLLERS	• RELAY MESSAGES TO CONTROLLER

346 START UP - WAITING FOR EVENTS	
EVENTS	STEPS
366 NETWORK CONNECTION	• SESSION REQUEST TO CONTROL UNIT
368 RECEIVE LOGIN SCRIPT	• PROCESS LOGON SCRIPT • PROVIDE INTERFACE CONFIGURATION • GO TO BASE STATE

FIG. 9

380

STANDBY STATE - WAITING FOR EVENTS	
EVENTS	STEPS
388 AUDIO SESSION SIGNAL FROM PACKET VOICE GATEWAY	• TRANSITION TO CALL SIGNALING STATE • REPORT STATE TRANSITION TO CSS APPLICATION
390 SUBSCRIBER INTERFACE CONTROL (OFF HOOK)	• TRANSITION TO OFF HOOK STATE • REPORT STATE TRANSITION TO CSS APPLICATION
392 SESSION SETUP EVENT FROM CSS APPLICATION	• SEND CALL SIGNALING MESSAGE TO GATEWAY • TRANSITION TO CALL SIGNALING STATE • REPORT TRANSITION TO CSS

382

CALL SIGNALING STATE - WAITING FOR EVENTS	
EVENTS	STEPS
394 ON HOOK EVENT	• RETURN TO STANDBY STATE • REPORT STATE TRANSITION TO CSS APPLICATION
396 TERMINATION OF SIGNALING	• RETURN TO STANDBY STATE • REPORT STATE TRANSITION TO CSS APPLICATION
398 READY FOR AUDIO SESSION	• TRANSITION TO AUDIO SESSION STATE • REPORT STATE TRANSITION TO CSS APPLICATION

FIG. 10A

384

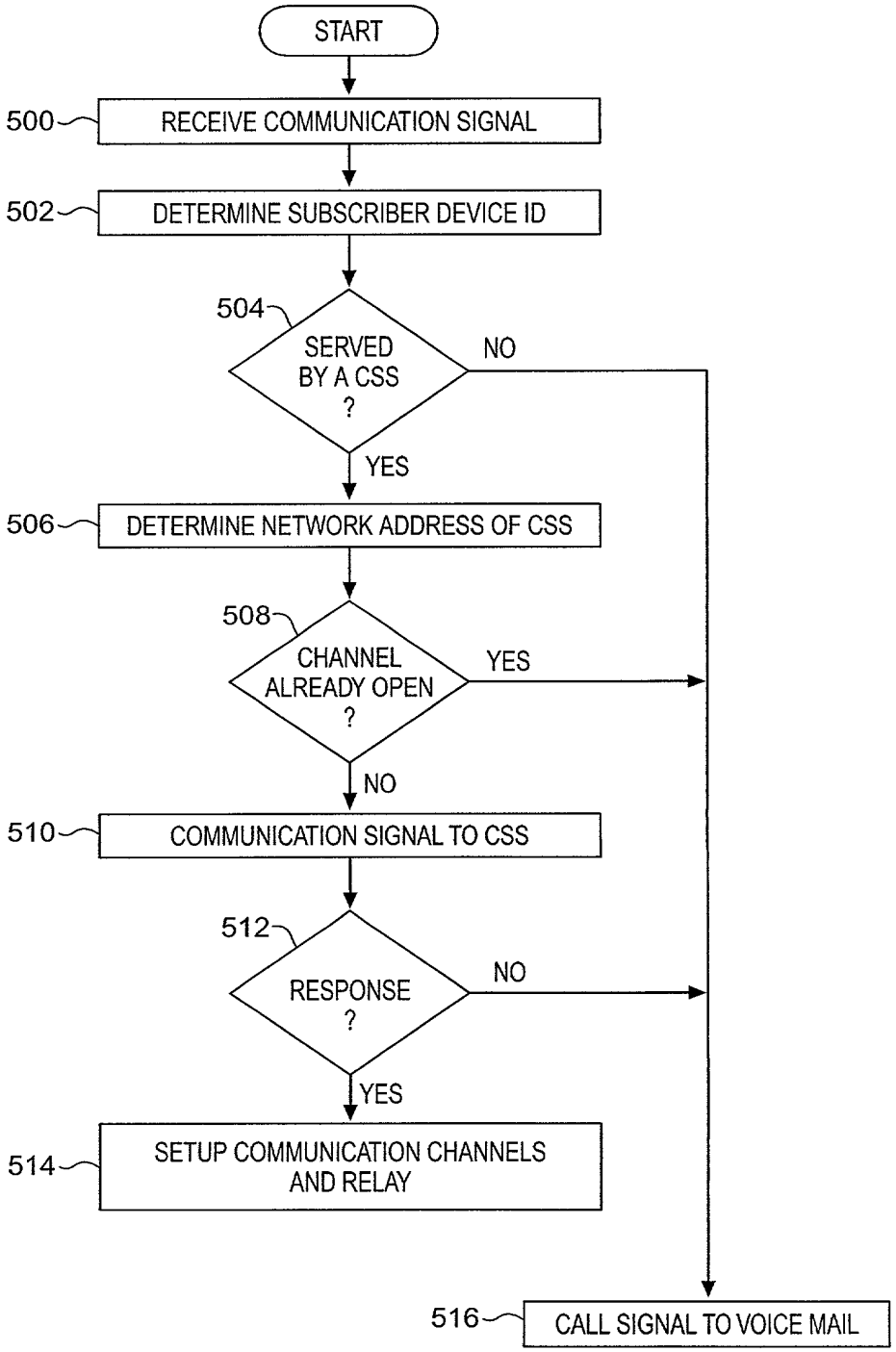
OFF HOOK STATE - WAITING FOR EVENTS	
EVENTS	STEPS
400 SUBSCRIBER INTERFACE CONTROL (KEY PAD ACTIVATION) FROM CSS APPLICATION	• GENERATE DTMF TONE
402 VALIDATION OF NUMBER SEQUENCE	• SEND CALL SIGNALING MESSAGES TO GATEWAY • TRANSITION TO CALL SIGNALING STATE • REPORT TRANSITION TO CSS APPLICATION
404 SUBSCRIBER INTERFACE CONTROL (ON HOOK)	• RETURN TO STANDBY STATE

386

AUDIO SESSION STATE - WAITING FOR EVENTS	
EVENTS	STEPS
406 TERMINATION OF AUDIO SESSION	• RETURN TO OFF HOOK STATE
408 SUBSCRIBER INTERFACE CONTROL (KEY PAD ACTIVATION)	• GENERATE DTMF TONE
410 SUBSCRIBER INTERFACE CONTROL (ON HOOK) FROM CSS APPLICATION	• RETURN TO STANDBY STATE

FIG. 10B

FIG. 11


START
500
RECEIVE COMMUNICATION SIGNAL
502
DETERMINE SUBSCRIBER DEVICE ID
504
SERVED BY A CSS ?
NO
YES
506
DETERMINE NETWORK ADDRESS OF CSS
508
CHANNEL ALREADY OPEN ?
YES
NO
510
COMMUNICATION SIGNAL TO CSS
512
RESPONSE ?
NO
YES
514
SETUP COMMUNICATION CHANNELS AND RELAY
516
CALL SIGNAL TO VOICE MAIL

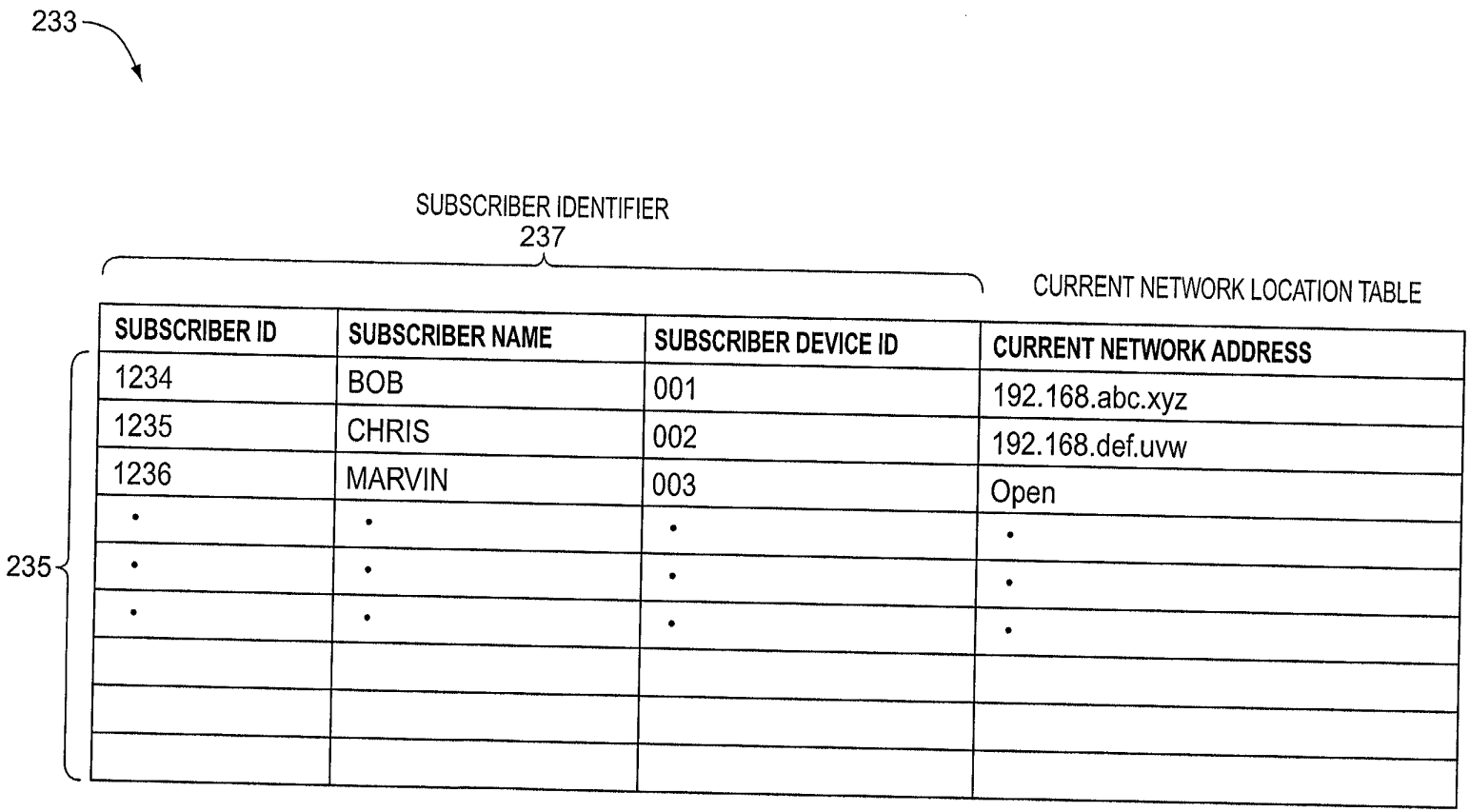

233
SUBSCRIBER IDENTIFIER
237
CURRENT NETWORK LOCATION TABLE
235
SUBSCRIBER ID
SUBSCRIBER NAME
SUBSCRIBER DEVICE ID
CURRENT NETWORK ADDRESS
1234
BOB
001
192.168.abc.xyz
1235
CHRIS
002
192.168.def.uvw
1236
MARVIN
003
Open

FIG. 12

CALL FORWARD FILE 245				
SUBSCRIBER DEVICE ID CODE 518	DESIGNATED NUMBER 520	WAN CONTROLLER 522	CALL FORWARD COMMAND 524	DEACTIVATE COMMAND 526
001	330-555-1234	123.456.789.000	CHARACTER STRING	CHARACTER STRING
002	330-555-1235	941-555-0000	*71*3305551235	*70*3305551235
003	330-555-1236	330-555.1236	*65*3305551236	*60#
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•

FIG. 13